

REMARKS:

In the outstanding Office Action, claims 3, 4, 8, 9, 11, 13 and 18 were objected to and claims 1, 2, 5-7, 10, 12, 14-17, 19 and 20 were rejected. New claim 21 is added, and claim 10 has been cancelled without prejudice. Claims 1, 6, 14, 15, 18 have been amended. Thus, claims 1-9 and 11-21 are pending and under consideration. No new matter has been added. The rejections are traversed below.

REJECTION UNDER 35 U.S.C. §112¶2:

Claim 10 is rejected under 35 U.S.C. 112¶2 as being indefinite. Claim 10 is cancelled herein.

Accordingly, withdrawal of the 35 U.S.C. 112¶2 rejection is respectfully requested.

ALLOWABLE SUBJECT MATTER:

At page 5 of the outstanding Office Action, the Examiner indicated that claims 3, 4, 8, 9, 11, 13 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

REJECTION UNDER 35 U.S.C. §102(b):

Claims 15, 16 and 19 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,101,020 ('020), and further claims 14-16 and 19 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,094,286 ('286).

Independent claims 14 and 15 as amended recite, a collimating lens having "a refraction surface provided on one side and a diffraction surface provided on an opposite side", where "a power of the diffraction surface is larger than a power of the refraction surface". This prevents a focal distance of the collimating lens from varying even when a change in temperature occurs.

However, '020 discusses a collimating lens with at least one surface of the collimating lens including a zone plate diffractive optical surface (see, column 3, lines 45-54 of '020), where if the zone plate diffractive optical surface is formed on the collimating lens, the lens power will be a composite of refractive/diffractive optical power (see, column 5, lines 35-43 of '020). Accordingly, the '020 reference does not teach or suggest, a collimating lens having "a refraction surface provided on one side and a diffraction surface provided on an opposite side", where "a power of the diffraction surface is larger than a power of the refraction surface", as recited in amended independent claim 15 of the present application.

The Examiner also relies on '286 to reject claims 14 and 15. The '286 reference

discusses providing a diffracting optical element as a diffracting portion to one surface of a collimator lens (see, column 16, lines 1-5 of '286), where focus changes in a main scanning direction resulting from environmental fluctuations of a scanning optical apparatus are corrected by changes in a power of the diffracting portion (provided to the surface of the collimator lens) and f θ lens as a refracting portion (see, column 16, lines 45-51 of '286). Thus, the '286 reference does not teach or suggest, "a collimating lens" having "a refraction surface provided on one side and a diffraction surface provided on an opposite side", where "a power of the diffraction surface is larger than a power of the refraction surface", as recited in amended independent claims 14 and 15 of the present application.

It is submitted that the independent claims 14 and 15 are patentable over '020 and '286 because '020 and '286 fail to teach or suggest each and every element as recited in independent claims 14 and 15.

For at least the above-mentioned reasons, claims depending from independent claims 14 and 15 are patentably distinguishable over '020 and '286. The dependent claims are also independently patentable. For example, as recited in claim 19, "the collimating lens is made of a single lens" and has refraction and diffraction surfaces, where "a power of the diffraction surface is larger than a power of the refraction surface" (claim 15 upon which claim 19 depends). Neither the '020 nor the '286 reference teaches or suggests, "collimating lens made of a single lens" and provided with refraction and diffraction surfaces, where "a power of the diffraction surface is larger than a power of the refraction surface".

Therefore, withdrawal of the rejection is respectfully requested.

REJECTION UNDER 35 U.S.C. §103(a):

Claims 1, 2, 6, 7, 10, 17 and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over '286, and further claims 1, 2, 5-7, 10, 12 and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over '020.

As noted above, claim 10 is cancelled herein without prejudice. The rejection of claims 1, 2, 5-7, 12, 17 and 20 is traversed below.

Independent claims 1 and 6 also recite, a collimating lens with a refraction surface provided on one side and a diffraction surface provided on an opposite side where "a power of the diffraction surface is larger than a power of the refraction surface". As discussed above, the '020 and '286 references, either alone or in combination, do not teach or suggest a collimating lens where "a power of the diffraction surface [provided on one side] is larger than a power of

the refraction surface [provided on an opposite side], as recited in claims 1 and 6.

For at least the reasons mentioned above, dependent claims 2, 7, 17 and 20 are also patentably distinguishable over the combination of the '020 and '286 references.

Therefore, withdrawal of the rejection is respectfully requested.

NEW CLAIM:

New claim 21 has been added to recite, a collimating lens made of a single lens including "a refraction surface provided on one side" and "a diffraction surface provided on an opposite side", where "a power variation of the refraction surface is offset by a power variation of the diffraction surface". For example, when the collimating lens expands, there is no power variation in the collimating lens because the power variation on the refraction surface is offset by the power variation on the diffraction surface.

It is respectfully asserted that new claim 21 is patentably distinguishable over the '020 and '286 references.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

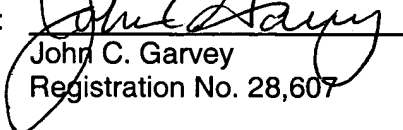
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with the filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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